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NOMINATION—NTSB

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

NOMINATIONS

APRIL 19, 1990

JOHN K. LAUBER, TO BE A MEMBER, NATIONAL TRANSPORTATION SAFETY BOARD

Printed for the use of the
Committee on Commerce, Science, and Transportation

U.S. GOVERNMENT PRINTING OFFICE

29-984 O WASHINGTON : 1990

5261-51.

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NOMINATION—NTSB

THURSDAY, APRIL 19, 1990

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The committee met, pursuant to notice, at 1:59 p.m., in room SR-253, Russell Senate Office Building, Hon. Wendell H. Ford, presiding.

Staff members assigned to this hearing: Carol Carmody and Becky Kojm, professional staff members and Ruth Johnson, minority professional staff member.

OPENING STATEMENT BY SENATOR FORD

Senator FORD. Good afternoon, ladies and gentlemen. We are here today to consider a nomination to the National Transportation Safety Board, the NTSB. The NTSB is responsible for determining the causes of accidents and making safety recommendations based on those determinations. I believe our role in considering and confirming nominees to the Board is one of the most important things we do on the committee.

Our nominee today has been a member of the Board since 1985, and we are pleased that the White House has renominated him, and I underscore "pleased." He has been a distinguished member and has performed outstanding work, especially in the areas of human factors in aviation.

Before joining the NTSB in 1985, Mr. Lauber had been employed at the NASA-Ames Research Center, where he worked first as a research scientist and later as Chief of the Aeronautical Human Factors Research Office. He also served for a number of years at the U.S. Naval Training Devices Center as a research psychologist.

Mr. Lauber has three degrees, including a PhD in Physiological Psychology from Ohio State University. His expertise in aviation includes credentials as a commercial pilot and instrument ground instructor.

We welcome you this afternoon, Mr. Lauber, and we look forward to your statement and some answers to our questions.

And I am awful pleased to have the Honorable Senator from Maryland, Barbara Mikulski, to present the nominee. Senator?

STATEMENT OF HON. BARBARA A. MIKULSKI, U.S. SENATOR FROM MARYLAND

Senator MIKULSKI. Thank you, Mr. Chairman.

It is a pleasure to be here today to bring to your attention Dr. John Lauber, and to express my own strong support for his nomination to the National Transportation Safety Board.

In your remarks you listed Dr. Lauber's outstanding contributions, but I think we all should be aware that since joining the National Transportation Safety Board, he has combined his technical expertise and attentiveness to detail with a broad knowledge of health and psychological issues. We know him from working in the space program. We know him from his work in his own professional field as a research psychologist at the Naval Training Equipment Center. He has had to actually design equipment, whether it is to protect astronauts or our air force, the naval air force people. And he actually then knows how to get out there and have the academic and the hands-on expertise to evaluate these.

Mr. President—I mean, Mr. Chairman——

Senator FORD. That was all right.

Senator MIKULSKI. I dream big.

Mr. Chairman, at a time when it is hard to both recruit or retain people who want to be part of our dedicated civilian service here, it is just wonderful that Dr. Lauber was willing not only to do his first five years, but wants to do it for another stint. I think we are lucky to have him. I think we should do everything we can to keep him, and I hope that as the committee considers his nomination, it will report it favorably.

Dr. Lauber has the good sense to live in Bethesda, Maryland, but that's not the only reason why he's a good choice to continue on the NTSB.

Dr. Lauber is one of the foremost experts in America on human factors in transportation—that is, for example, how to design an aircraft or spacecraft so that it works for the person flying it.

How to design the seats so they're comfortable. Where to put the dials and gauges so they're easy to reach and to see.

If an aircraft isn't designed for the comfort and convenience of the pilot, it's more likely that aircraft will get into accidents.

Dr. Lauber's academic and professional background is exceptional. He holds bachelor's and master's degrees as well as a Ph.D. in Physiological Psychology from Ohio State University.

He has taught psychology at that university. He has worked as a research psychologist for the Naval Training Equipment Center.

Between 1973 and 1985, he held a number of significant responsibilities in the field of man-vehicle systems research and human research at NASA, including serving as Chief of the Aeronautical Human Factors Research Office from 1984 to 1985.

Dr. Lauber has published numerous articles and made many speeches to professional associations on issues relating to aviation safety.

He is a pilot himself, as well as an avid sailor.

Since joining the National Transportation Safety Board in December, 1985, Dr. Lauber has combined his technical expertise and attentiveness to detail with a broad knowledge of health and psychological issues.

That background is so important when you're dealing with the tragedy of a crash or other transportation disaster.

As an NTSB member, Dr. Lauber has been sensitive to the delicate balancing of interests that must go on at the time of a transportation disaster.

He has accommodated the public right to know, while responsibily bearing in mind that the credibility of an entire industry may be at stake.

The traveling public is lucky to have a professional of the caliber of Dr. Lauber on the NTSB. I urge this committee to confirm his renomination.

Senator FORD. The late arrival is here, but he's on the move. He's only one minute late. I was telling them, Congressman, I was going to have a Goldwater hearing: in and out.

While you're getting your statement, I want to support one of the statements that Senator Mikulski made that in this day and age, it is difficult to find the right kind of people with the right kind of background willing to dedicate themselves to service to not only this government, but to its people. And I am very pleased with that statement and I underscore that.

Congressman Mineta, you may proceed.

STATEMENT OF HON. NORMAN Y. MINETA, U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. MINETA. I apologize, Senator, for being late.

Senator FORD. No apology is necessary.

Mr. MINETA. Well, having been part of that contingent that just returned not too many hours ago from our very fine, dear colleague, Senator Matsunaga's funeral in Hawaii, I apologize for being late.

Mr. Chairman, I really appreciate this opportunity to join our very distinguished friend, Senator Mikulski, in having this opportunity to introduce to you formally Dr. John K. Lauber. I have had the pleasure of knowing John for many years, and throughout those years, he has earned my highest admiration and respect. He was at NASA Ames in Mountain View, which is right outside of San Jose, my constituency, and in fact John was a constituent before coming back to Washington.

Today as a member of the National Transportation Safety Board, Dr. Lauber has helped the board meet its vital charge of ensuring the safety of our Nation's transportation system through accident investigation, safety recommendations and oversight of transportation agencies. Dr. Lauber has come to be widely recognized for his professional, evenhanded handling of transportation safety matters.

As a technical expert, Dr. Lauber's accomplishments are distinguished and illustrate an uncommon expertise which is truly invaluable in today's world of complex and ever-changing high technology. Much of his work has led to a greater understanding of the largest single cause of transportation accidents, namely, human error.

My position on the House Committee on Public Works and Transportation has allowed me the opportunity to see firsthand how John's leadership has helped shape transportation policy in this country. As an NTSB member, he has been a forceful, able and

effective advocate for transportation safety. He has been instrumental in spurring action by government and industry to develop solutions to longstanding safety concerns.

Very simply, Dr. Lauber is uniquely qualified to continue his tenure as a member of the NTSB. Time after time, he has met the challenges which affect safety in aerospace and aviation industries and emerged with innovative and effective results.

Mr. Chairman, Dr. John Lauber's reappointment to the NTSB will reaffirm congressional commitment to public safety of the Nation's transportation system. I know you're familiar with his work, and I urge your favorable consideration of his candidacy.

Thank you very, very much.

Senator FORD. Thank you very much, Congressman. If you care to leave, why, we won't be very long with Mr. Lauber. Thank you, Senator Mikulski and Congressman Mineta.

I have an opening statement that Senator Hollings would like to have included in the record and also your biography and prehearing questions.

[The statement, biographical sketch, and questions and answers follow:]

OPENING STATEMENT BY THE CHAIRMAN

The National Transportation Safety Board (NTSB) was created by statute in 1974 to investigate transportation accidents and to develop recommendations to improve safety. In my view, the NTSB's job is really accident prevention, and, as such, is extremely important to all of us as Senators and as members of the travelling public.

The five Board members have an important responsibility: first to find the cause or causes of an accident, and then to try to find methods to prevent recurrences. Their recommendations may not always be popular with industry or regulatory agencies. The Board members must be thorough, unbiased and knowledgeable.

The statute requires that at least three of the Board members possess technical credentials. Mr. Lauber certainly has these credentials, not only from serving five years on the Board, but also because of his experience at NASA-AMES and his extensive work in human factors issues in aviation. In this regard, people are beginning to recognize that as systems, whether in aviation or other transportation modes, become more automated, and as many tasks become routine, the human element is crucial to safety. Too many accidents lately have been due wholly or partially to the failure of the human operator to follow routine, to exercise judgment, or to react at the critical time. If the NTSB and others can figure out a way to address this human factor problem, they will have gone far toward ensuring the safety of civil transportation. Mr. Lauber clearly has the background to contribute to this effort.

We welcome Mr. Lauber and look forward to hearing from him.

ERNEST F. HOLLINGS, SOUTH CAROLINA, CHAIRMAN

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United States Senate

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

WASHINGTON, DC 20510-6125

STATEMENT FOR COMPLETION BY PRESIDENTIAL NOMINEES

(If more space is needed, please use attached REMARKS sheet)

A. BIOGRAPHICAL DATA

1. Name: Lauber (Last) John (First) K. (Other)

   Address: 5827 Osceola Road (Current residence) Bethesda, MD 20816

   800 Independence Av.SW (Business) Washington, DC 20594

2. Position to which nominated: Member of the National Transportation Safety Board

   Date of nomination: 3/19/90

3. Date of birth: 12 (month) 13 (day) 42 (year)

   Place of birth: Archbold, Ohio

4. Marital status: Married

   Full name of Spouse: Susan Myers Lauber

5. Names and ages of children: stepdaughter - Sarah Howland Clark Nelson, age 29

6. Education:

Institution	Dates attended	Degrees received	Dates of degrees
Ohio State University	1/64-8/69	BS, MA, PhD*	
Bowling Green State University	9/60-6/63	none	
Archbold High School	9/56-6/60	HS Diploma	6/60

*PhD: 8/69; MA: 6/67; BS: 6/65

7. Employment record: List all positions held since college, including the title or description of job, name of employer, location of work, and dates of inclusive employment.

From	To	Name of employer	Address	Type of work
8/69	3/73	U.S. Naval Training Equipment Center	Orlando, FL	Research
3/73	11/85	NASA Ames Research Center	Moffett Field, CA	Research
11/85	present	National Transportation Safety Board	Washington, DC	Member

8. Government experience: List any experience in or direct association with Federal, State, or local governments including any advisory, consultative, honorary or other part-time service or positions.

My professional career has been in the employment of the Federal Government. I have also served as a panel member for the National Academy of Sciences Institute of Medicine to review the scientific evidence relevant to the mandatory age 60 retirement for airline pilots (1980), and as Assistant Technical Director for President Reagan's Task Force on Aircraft Crew Complement. From November 1987 to October 1989, I served as a member of the Air Force Studies Board of the National Academy of Sciences. Since August 1988, I have been a member of NASA's Aeronautics Advisory Committee.

9. Political affiliations activities: List all memberships and offices held in or financial contributions and services rendered to all political parties or election committees during the last 10 years.

Contributed $100 to Mikulski for Senate in 1986.

Since 1988, contributing member Democratic National Committee:

1988 - $500, 1989 - $250

3

10. Memberships: List all memberships and offices held in professional, fraternal, scholarly, civic, charitable, and other organizations.

Aerospace Medical Association (Fellow)

Human Factors Society

11. Honors and awards: List all scholarships, fellowships, honorary degrees, honorary society memberships, and any other special recognitions for outstanding service or achievement.

National Institute of Mental Health Predoctoral Fellow (1965-69)

Sustained Superior Performance, Naval Training Equipment Center (1972)

Group Achievement Award, Aviation Safety Reporting System, NASA (1978)

Elected President, Association of Aviation Psychologists (1979)

Elected Fellow, Aerospace Medical Association (1984)

Center Director's Award for Outstanding Leadership, Ames Research Center (1984)

NASA Outstanding Leadership Medal (1985)

Flight Safety Foundation/Aviation Week and Space Technology's Distinguished Service Award (1987)

12. Published writings: List the titles, publishers, and dates of books, articles, reports, or other published materials you have written.

Curriculum Vitae attached.

Answers to Pre-Hearing Questions Submitted by the Majority to John K. Lauber, Nominee for National Transportation Safety Board

1. Q: What do you consider your major contribution in the period you have already served on the NTSB? What do you hope to accomplish in your second term?

A: During my term on the NTSB, I have had many opportunities to deal with safety issues in all modes of transportation. One of the most prevalent causes of incidents and accidents, regardless of the mode of transportation involved, is human error. Errors in making decisions, executing plans, perception, communications, and other "human factors," either cause or contribute to the vast majority of transportation accidents. Because of my previous experience in aviation human factors work, I have been able to apply some of the practices and principles developed in that area to the other modes of transportation as well. Many marine accidents, for example, involve failures in crew performance very similar to what we have seen in aviation. Due in part to encouragement from the Board, efforts are now underway to develop ship bridge management training programs similar to those developed for cockpit resource management. Many rail and highway accidents involve fatigue and circadian (time of day) factors similar to problems seen in aviation. Further, most accidents involve some failure or shortcoming in supervision, management and oversight--the organizational factors which directly affect the performance of individuals in their jobs.

I believe that I have helped educate government and industry leaders and the general public about the pervasive nature of human factors issues as they affect transportation safety. For example, the National Transportation Policy statement recently released by the Secretary of Transportation gives necessary and appropriate attention to these issues. This I believe, is a first, and critical, step in developing effective long-term solutions to such problems.

There are several areas where I would like to concentrate my attention if confirmed for a second term at the Board. I believe that the transportation of hazardous materials is an area fraught with potential for disaster, and that much must be done to develop better, safer ways of moving such goods. I think that operator fatigue and related issues are becoming increasingly important as we continue to move toward becoming a truly 24-hour society. Issues ranging from education and training of individuals to the development of rational regulations governing rest and duty time requirements, need to be addressed. I also strongly believe that organizations have a direct role to play in preventing human error accidents; many airlines recognize the need for a strong, independent flight safety department. I think similar concepts could be applied in other transportation industries. Finally, I will continue my efforts to promote the development of advanced techniques for controlling and managing human error.

Q: 2. In some of your speeches, you have suggested that airline deregulation may have had, or is having, an effect on safety. Have you found any evidence of this?

A: On the basis of the statistical record, it is apparent that economic deregulation has not had the adverse effects on air safety predicted by many. Although the accident rates for scheduled passenger operations last year are up, there is no reason to believe at present that this represents more than normal variation in accident rate data. In my opinion, one of the best statistical studies of air safety was published last year by Arnold Barnett of MIT and Mary Higgins of the Air Force Center for Studies and Analysis. They conclude that U.S. domestic jet travel has become safer by a factor of 4 since 1977, and by a factor of 10 in the last two decades. Interestingly, they conclude that, "...the improvement would have been greater still in the absence of airline deregulation." (Barnett & Higgins: Airline Safety: The Last Decade. Management Science, V35, January 1989). They base this conclusion on the observation that many new jet carriers were spawned by deregulation, and that as a group, the recent entrants averaged twelve times the death risk per flight of the established trunklines.

Although the statistical record seems clear on this point, I do think there may have been some byproducts of economic deregulation that have taken their toll. In one of my papers, I present an analysis of the accident involving NW255 at Detroit. Although there are many human factors issues in that accident, I did mention "the unsettling nature of the economic upheavals within the airline industry caused by deregulation nearly a decade earlier." I also mentioned specifically "...changes attendant to the merger of Republic, the parent airline for these pilots,and Northwest--their new home." Later, I conclude by asking, "Can it be proved that any of these factors directly affected the performance of the pilots? No, probably not. Do I believe they did? Without doubt." (Northwest 255 at DTW: Anatomy of a Human Error Accident, pp 8-9).

I go on to point out the real challenge posed by issues such as these is to design and operate systems in such a way that they are error-tolerant. Human error, regardless of the immediate cause, will never be eliminated--it is the nature of the beast. Thus, we must design aircraft cockpits, air traffic control systems, and other major elements of our transportation system in such a way that error, when it does occur, is detected and corrected before an incident or accident happens.

Q: 3. Are you satisfied with the efforts of the Federal Aviation Administration and the airline industry to address human factors - not only in the cockpit, but in the hangar, and the cabin?

A: In general, yes. The airline industry, under the auspices of

the Air Transport Association's Human Factors Task Force moved aggressively to form a joint industry/government working group to address human performance issues. This effort culminated in April, 1989 with the publication of the "National Plan to Enhance Aviation Safety Through Human Factors Improvements." This publication provides a blueprint for a broad-ranging research and development effort focused upon human factors issues, and the FAA has brought my former colleague, Clay Foushee, on board to develop and implement a unified, coordinated plan; Dr. Foushee and his colleagues are meeting this week to finalize major elements of the National Plan.

Both the ATA blueprint, and the FAA program that Dr. Foushee is putting into place, address human factors issues beyond the cockpit. In addition to cockpit/cabin crew interaction, and human factors issues in maintenance, the plan will also address other areas needing human factors research, especially, Air Traffic Control.

However, having a well-thought out, comprehensive plan for action is only the beginning, and I think that all of us will be responsible for seeing that the FAA, and I would add here, NASA which has a vital role in carrying out much of the planned research, do in fact adequately support and manage this vital research and development program. It is clear that there is a very large potential payoff from this work for the nation, both in terms of economics and safety.

Q:4.Do you believe the NTSB has the necessary technical expertise to continue to investigate accidents in all areas of transportation?

A: Again in general, yes. Our technical staff represents a wide variety of educational backgrounds, experience and expertise. I do believe, however, that we need to provide the staff with more opportunities for training and professional development. For example, in aviation, the advent of the new technology, "glass cockpit" airplanes is upon us. These airplanes present new challenges in many areas, including accident and incident investigation, and we must make sure that staff have had adequate training on the special operational and maintenance needs posed by these aircraft. Similar considerations apply in other modes of transportation as well--for example, sophisticated automatic train control systems are starting to come into use. These, too, will require special training and expertise.

I think too that we are woefully thin in many technical areas. Given the small size of our staff, we generally have only one, sometimes two, people with expertise in any given area. This means that when we have more than one major accident occurring in a short period of time, we quickly run out of people to assign to the investigations. Furthermore, this also makes us especially vulnerable to the loss of personnel through attrition, and doesn't afford us much opportunity to provide on the job training which is

very important in an area as highly specialized as accident reconstruction and investigation.

The one area in which we clearly do not have sufficient expertise is a new one for the agency: commercial space launches. Although we supported NASA during their investigation of the Challenger accident, having the lead responsibility for conducting such investigations poses an entirely new set of problems for use. We need to look carefully at this issue, and make sure that we have anticipated the requirements for technical expertise.

Senator FORD. John, if you want to proceed now, you may highlight your statement or read it all, whatever you prefer.

STATEMENT OF DR. JOHN K. LAUBER

Dr. LAUBER. Thank you, Mr. Chairman.

Senator FORD. We do have some answers to prehearing questions submitted by the majority to you, and they are adequate I think. I'll have today maybe one or two others. But you may proceed.

Dr. LAUBER. Thank you and I wish to thank Senator Mikulski and Congressman Mineta and also the Chairman for your kind remarks in your opening statements and for appearing here to present me to the committee this morning.

I will just briefly summarize my opening statement.

You have heard reference to the work that I did at NASA. I came to the National Transportation Safety Board four and a half years ago with a sense of pride and accomplishment for the work that I had been associated with at Ames. I think that work had, and continues to have, a positive effect on aviation safety. I am very proud of that.

I came here too, with a little bit of a sense of foreboding, a new role—no longer a scientist and a technocrat—in a new environment. I was familiar with simulators and laboratories, and Washington is a laboratory in a sense, but in a very different sense from what I had been dealing with. I wasn't quite sure what to expect.

While I do not give myself a 100 percent score, I think I have made some contributions to the Board, and I certainly am proud of my association with this agency. I think it's an outstanding agency in concept. It is independent. It is diverse, and it has a technically competent staff that is known throughout the world for their capabilities and expertise in doing accident reconstruction and accident investigation in all modes of transportation. It really is an honor to be associated with that group and to help in my own way to accomplish the goals of that agency, which is to oversee the safety of the Nation's transportation system.

If I am confirmed for a second term, I pledge to continue to do whatever I can to move the agency along in its efforts and really do appreciate the opportunity to be here and would be happy to respond to whatever questions you may have.

[The statement follows:]

Opening Statement of John K. Lauber

Mr. Chairman and Members of the Committee, I am honored to appear before you today as you consider my appointment to a second term on the National Transportation Safety Board.

When I left NASA's Ames Research Center in 1985 to come to the Board, I did so with a sense of pride and accomplishment--much of the work I was fortunate enough to be associated with at Ames had, and continues to have, a positive effect on aviation safety. I also came with some sense of foreboding--that I might not be able to meet the challenges posed by an entirely new role--that of policymaker as opposed to that of a scientist and technocrat--in what was, for me, an entirely new environment--Washington, D.C., as opposed to the well-known, predictable, and comfortable world of simulators and laboratories. Although I think I could have done some things better, I am very proud of my association with the Board during the past 4-1/2 years, and believe that I have contributed to the Board's many accomplishments in safeguarding the Nation's transportation system during that period of time.

As a concept, the Board represents a shining example of how to fulfill one of government's primary roles, that of assuring its citizens that their expectations regarding personal safety are being, and will continue to be, met. Through its independence as a government agency, the Board should be free of conflicts-of-interest as it considers and decides the causes of major transportation accidents and remedies for the problems and faults that led to those accidents. Through its diversity as a collegial body of five members with widely varying backgrounds and points of view, the Board should be broad-ranging in its consideration of factors affecting the safety of the traveling public, from highly technical issues, such as the metallurgical properties of materials used to construct components of jet engines, through highly political issues, such as the effects of major national policies, like economic deregulation, upon transportation system safety. And finally, through the objectivity and technical competence of its highly-skilled technical staff, its deliberations, findings, and recommendations should be well-founded in facts and solid analysis.

As a reality, the Board represents as nearly a clear-cut example of success as may be possible in a world where the ideal and the real often collide. The Board has been quite willing to "tell it like it is" in assigning causal and contributing factors, regardless of the organizations, private or government, involved. The findings of the Board in any given investigation nearly always range from the specific engineering and technical factors involved, to the organizational issues such as management and supervisory factors and issues having to do with government oversight. And the Board is recognized throughout the world for the competence, skill, and expertise of its staff and for their abilities to ferret out the facts and circumstances of major transportation catastrophes.

This is not to say that I think all is perfect at the Board--

it is not, and each of us here today can probably think of examples where the ideal and the real have collided at the ultimate expense of the ideal. I think that many of the problems are related to the long-term problem of resources; the Board has shrunk from a peak of 401 people in 1980 to 322 today during an era when the Nation's transportation system has grown significantly. However, I am hopeful that recent developments signal a reversal of these adverse trends. Our budget for the next fiscal year reflects an increase and will enable us to start to repair some of the damage. Chairman Kolstad plans to expand our staff by more than 20 people, and will be able to purchase needed laboratory and other equipment, and augment staff training and other professional development efforts. I am very pleased to see this happening, but want to caution that this is just a start. Much more remains to be done.

Mr. Chairman and Members of Committee, I hope it is clear that I am an enthusiastic advocate of the NTSB, its staff, its mission, and its many safety accomplishments. If confirmed for a second term, I pledge to do my best to contribute in whatever way I can to the continued success of this small but highly important agency in helping assure the safety of the traveling public.

This concludes my opening statement. I would be happy to respond to your questions at this time. Thank you.

Senator FORD. Thank you very much.

We have been joined by Senator Pressler. Senator Pressler, do you have an opening statement?

Senator PRESSLER. I do not. I have a question or two I would like to ask at the appropriate time.

Senator FORD. All right. You do know we have pre-hearing questions that have been asked, and the answers are available to you.

Senator PRESSLER. Yes.

Senator FORD. The statement for completion by presidential nominees is available. I have reviewed his FBI report, and it's squeaky clean.

So, we will go from there.

Just a general question, Mr. Lauber. You have had the benefit of approximately five years' experience on the Board. What areas of transportation safety do you think require more attention and in what areas could the board improve its effectiveness?

Dr. LAUBER. Well, I think there are several answers to that. I think I'll deal with the latter issue first.

The question of effectiveness, to a large extent, has been affected by a longstanding problem, which you have heard many times before, and that's the question of resources. Having an adequate staff and the workload on the staff that we do have, is a concern. The Board staff has shrunk significantly in an era when the Nation's transportation system has grown dramatically, and our workload, the workload on our staff, has increased in proportion to that growth in the transportation system.

This has had an adverse impact on us, and I am very pleased to see that we appear to have turned the corner. We have a budget increase for next year. I think we're going to have the opportunity, and the chairman is planning to add additional staff. So, I am hopeful that we can better deal with these issues.

I think there are a number of areas that are going to be of pressing concern. I mentioned in my response to prehearing questions that one of the areas that I'm concerned with is the whole area of

hazardous material transport. We move a tremendous amount of hazardous materials throughout this country, and there is significant risk associated with that as has been illustrated by a number of accidents that we have looked at. I think there are some disturbing issues that we really have not dealt with adequately in the past, and I want to address some of those.

I think, too, that if we look to the future of aviation, it is quite clear that we could predict some tremendous pressures to increase system capacity. System capacity clearly is a limiting factor that is affecting the capability of the Nation's aviation system to respond to the needs of the country. I am concerned that some of that capacity push could encroach upon safety margins that we have built in to the system, and I think one of the things I want to do is make sure that we keep on top of that.

We have in fact already dealt with, to some extent, some of those issues. I testified not long ago on the House side with regard to new technology and other issues dealing with the runway incursion problem and the whole problem of preventing collisions on the ground. This is another area in which I think we need to expand our efforts.

Senator FORD. In the last couple of days, there has been the fire protection/prevention convention here in town, and those people have been by visiting with their Representatives and Senators. My people in visiting me yesterday indicated that in the hazardous material arena, they need to find some way to be sure that when an accident occurs that they know what is in the tank. And they are at a loss as to how to be more accurate with that knowledge.

They have suggested maybe a national computer system so that when a car or an 18-wheeler or whatever moves, that is put into that computer system; wherever that accident might occur, they could pull it up and see immediately what is there and go once they get the license number or tank number.

It seemed to be expensive to me, and of course all things are run by the mother's milk called money. And they were suggesting maybe we put a small fee or charge on that hazardous material that is being transported. I don't know whether that is right or not.

But I do know that where an interstate highway goes through, it may go through a rich community, well-equipped. Then it goes through a very poor county we'll say in my state, and there is not a sufficient number of DES or whatever it might be. The state could respond, but it is normally not Johnny on the spot. Local training and experience I think is necessary.

Do you have any kind of suggestions that we might begin to think about as it relates to the transportation of hazardous materials?

Dr. LAUBER. I would agree with the observations that have been made, that keeping track of what is where in any given situation is probably one of the more difficult issues that the emergency response people have to deal with.

I am not aware of any specific proposals. That is, I do not believe that we have looked at any direct proposals with regard to this issue.

My sense is that there is some technology along the lines that you have mentioned that could be very useful. There have been

some remarkable developments in the use of satellites to track in real-time, or in near real time, the location of trucks. Apparently the cost is such that it is within the realm of possibility that they could become economically viable. So, if you could combine something like a computer data base and some method for tracking, in real time, specific vehicles, I think it might go a long way toward solving some of those problems.

Senator FORD. One final question. You mentioned aviation and the training. Are you satisfied with the training program for the traffic controllers? Are we adequately addressing that?

Dr. LAUBER. Not entirely, and we have made numerous observations and recommendations with regard to those training programs in the past.

One of the most frequently encountered shortcomings that we have seen has been the lack of suitable simulation and training aids, and devices, for use in training controllers. Simulation is the cornerstone of training pilots. There is absolutely no question about that. The technology enables you to do a tremendous job of training people with a minimum of cost. We think that there are many opportunities to apply this same kind of technology in air traffic controller training.

The FAA has made some moves in this direction, and I am hopeful that in the future we will see more of that. However, we still have a long way to go, I think, with regard to that and other issues, related to controller training.

Senator FORD. You mentioned you make recommendations. Now, are those recommendations sent to the Secretary of Transportation, or does that go directly to FAA?

Dr. LAUBER. Well, they go to whoever we think is in a position to do something to fix the problem. I do not know that we have sent any on that issue directly to the Secretary. They most likely have gone to the FAA Administrator. Although we may have made some general recommendations regarding air traffic control training to the Secretary, I do not recall having done so. Most of the recommendations have, in fact, gone directly to the Administrator.

Senator FORD. You have good members you say, and you say you have good people, and staff is beginning to be beefed up and they are well-trained and probably respected. Do you find the work at the National Transportation Safety Board now—I am sure you have your disagreements and that sort of thing, but is it going along reasonably well?

Dr. LAUBER. I think it is, Mr. Chairman. I think we have gone through a long period of hiatus and uncertainty. A lot of that seems to be behind us, and I am very optimistic about the future. I have every reason to believe that we will continue to make things better.

Senator FORD. Of course, you do work with other agencies, Federal Railroad, all that. Does that communication network seem to be working. Are they cooperative and you find cooperation from them now?

Dr. LAUBER. There are varying degrees of cooperation, and I think that's to be expected. It is the nature of the role that we play. We are a watchdog agency, and there are times when there

are going to be differences of opinion and other issues which can come up which can lead to difficulties in communication.

I note with a great deal of approval that the current chairman, Jim Kolstad, has undertaken a series of meetings with each of the modal administrators in part I think to overcome some of the difficulties in communication that we have seen in the past. I know that he and some of the senior staff members have met with those people. The signs that I have seen are that, by and large, we do have a cooperative relationship, but it is one that has and will continue to be at arm's length, as appropriate, given our role.

Senator FORD. I understand.

Senator Pressler?

Senator PRESSLER. Yes.

May I ask you about airline safety? In one of your prepared answers, you said that airline safety had improved under deregulation. That may be, but aside from the issue of deregulation, are there not technological advances available that could improve airline safety much more that we are not using? And what are some of them?

Dr. LAUBER. Yes. I think that is a fair statement, Senator. If you look statistically at the record, our air transportation system is very, very safe by any measure you want to use, whether you compare it to any other mode of transportation or you compare it even within aviation to other areas in the world.

That is not to say that we should accept the record that we have. When you look at the specific accidents that are occurring in aviation, they are preventable. There is not one of them that happens that should not have been preventable by one means or another. It is not that we are pushing state of the art. It is not that we are up against some unknown aspects of nature. They are preventable accidents. They are problems that we know about.

What we have to do is improve the way we train people, the way we put together operating procedures, the way we apply technology to solving some of these problems. We have to improve the management and oversight both within an airline company and within the government.

So, to say that the system has gotten safer is not to suggest we should rest on our laurels, because we are having preventable accidents, and I think we need to do everything we can to make sure that we, in fact, prevent them in the future.

Senator PRESSLER. Are the American airplanes modernizing fast enough? Aren't many of our airplanes old?

Dr. LAUBER. Well, yes. If you look at the numbers, they are old certainly—although it is a little bit difficult to know what to judge or gauge that against, since when you look at old commercial jet transportation, it is not really very old. Airplane age is something that we really do not have much to measure against.

We have looked very carefully at the issue of aircraft age, and certainly this is of major concern as a result of the Aloha accident. This was the accident that triggered a great deal of national concern with regard to the aging airplane issue. We have looked at that and continue to look at that very carefully.

My sense of this issue is that given the actions that were undertaken by the industry because of Aloha—the ATA put together a task force involving airline operators, the manufacturers, who put

together a series of recommendations for dealing with those problems. The FAA has implemented those recommendations now in rulemaking. My sense is that that issue is well in hand. There have been some significant changes made in the way that we deal with these issues, and I am satisfied at this point with the actions that have been taken. I think we understand what the problem was, and I think we are headed in the right direction.

Senator PRESSLER. As a member of the National Transportation Safety Board, what is your view on mandatory random alcohol and drug testing for pilots and other safety-sensitive employees in public transportation?

Dr. LAUBER. This whole issue of drug and alcohol testing and abuse and the effect it is having on our transportation system I think is probably one of the most difficult issues that any of us has had to deal with. We have certainly had our share of it at the Board. We can point to accidents in every mode of transportation which involve abuse of alcohol or other drugs. It is clear that we have a problem and that we have to fix it.

With regard to random testing for drugs and alcohol, I think there are better ways to proceed. The question is how are we going to prevent these things from happening in the future. My own sense, when I look at all of the considerations involved, is that we would do better to address other issues that are related to substance abuse—and I am referring specifically to what I think are very positive, and historically have been demonstrated to be very effective, programs such as employee assistance programs. These are in place at virtually all major air carriers, and have had a demonstrated history of success in terms of preventing substance abuse and for preventing substance abuse accidents. This also has the effect of returning people to productive and useful work. I strongly support this kind of approach.

I think we need to train people better. One of the issues that we run into frequently in investigations in which alcohol or other drugs are involved is the number of coworkers, of the drug- or alcohol-using employees, the specific people involved in the accident, who were unaware of a problem. They were not alert to the signs of abuse. They were not aware that there was any problem with the individual. They didn't notice anything unusual, and yet we know that there are observable effects of substance abuse and that people can be trained to watch for those things.

There are things that we can do to train coworkers, to beef up employee assistance programs, to make it a positive approach. At the same time this underscores a fact that sticks in my mind in all of this, that, as we speak, there are literally hundreds of thousands of people out there in this country who are doing their jobs who would never dream of using drugs or alcohol in conjunction with their work. It is because of a sense of pride and a sense of value and responsibility that they have. I would like to see these values emphasized because to me, in the long run, that is going to provide the best line of defense against substance abuse.

Senator PRESSLER. Well, let me say, just speaking for myself, that I tend to take a more pessimistic point of view. I tend to believe we are going to have to have some kind of random mandatory testing to really address the problem.

Finally, I noticed one of your major speeches was to the second annual meeting of the Association of Professional Sleep Societies. What did you say?

Dr. LAUBER. I didn't sleep through it, and I don't think the audience did.

The basic point of my message to that group—and that is, as the name implies, a group of researchers who deal with issues of sleep, sleep pathology, and its effects on human performance. There is a fair amount of sleep pathology in this country that we are learning more about and that can be treated.

My point in that speech was that sleep and fatigue and other related factors play a very significant role, and probably an underappreciated role, in transportation safety. We have become a 24 hour society, and yet the human being is still the same old mod 1/ mark 1 human being who needs about eight hours of sleep a night, plus or minus a couple of hours. It also depends on when you take that sleep, in terms of its effectiveness and its effect on your performance.

So, my message to them was that since we have become a 24 hour society, since we see in our accidents in all modes of transportation problems that relate to rest and work and related factors, for example, jet lag in aviation operations, we need to do more to understand what those issues and problems are and to make use of that information in devising rationally based regulations governing duty time and rest time and similar kinds of things. That was the basic thrust of my talk to the sleep researchers.

Senator PRESSLER. Thank you very much.

Dr. LAUBER. Thank you.

Senator FORD. If you can figure out a way where we can get less sleep and do more, you probably can box it and sell it.

Dr. LAUBER. You bet.

Senator FORD. John, I intend to recommend your reappointment to the full committee and ask for them to expedite it, and look forward to working with you in the years ahead.

Dr. LAUBER. Thank you, Mr. Chairman.

Senator FORD. This hearing is adjourned. [Whereupon, at 2:27 p.m., the committee was adjourned.]

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